

PASSIVE MONITORING DEVICES

FOREST INDUSTRY HEALTH RESEARCH PROGRAM

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The *Forest Industry Health Research Program (FIHRP)* has completed an examination of passive monitoring devices and their potential for large-scale and economically feasible workplace exposure assessments. Particular attention was given to passive monitors for sampling chlorine, chlorine dioxide, formaldehyde, hydrogen sulfide, and sulfur dioxide. A report is now available titled "**Passive Monitoring Devices**". To request a copy, contact **Agi Lee** at the Pulp and Paper Employee Relations Forum at (604) 777-1533, send a fax to (604) 777-1567 or email alee@paperforum.com. Non-members of the Forum may be charged for the reports.

This report was prepared with the following objectives: introducing the reader to this technology with emphasis on tube- and badge-type monitors; explaining strategies, guidelines, and regulatory issues to consider when planning to use passive monitors; comparing the performance of devices available for chlorine (Cl₂), chlorine dioxide (ClO₂), formaldehyde (HCHO), hydrogen sulfide (H₂S), and sulfur dioxide (SO₂) exposure assessments; describing evaluation tests conducted for one of the chlorine dioxide monitors; surveying the range of tube- and badge-type monitors available; and identifying data gaps regarding the performance of these devices.

Products were compared with respect to their applicability to compliance level monitoring. Data were collected from product manufacturers, from third party validation studies, and from results of evaluation work conducted at B.C. Research Inc.

One ClO₂ monitor was evaluated in-house at BC Research Inc. to assess its performance at exposure levels near the WCB short-term Permissible Concentration. The results suggest that this device would be appropriate for qualitative short-term ClO₂ assessments.

A review of all available information found the largest data gaps were with regard to the scarcity of third party investigations verifying accuracy of currently available Cl₂, ClO₂, H₂S, and SO₂ devices. Recently available preliminary results of research recently conducted by the National Council of the Paper Industry for Air and Stream Improvement (NCASI) for H₂S, Cl₂, and ClO₂ monitors were reported, however.

Recommendations for further studies aimed at eliminating existing data gaps were given.